

Progress Toward the $K_L \rightarrow \pi^\pm e^\mp \nu e^+ e^-$ Paper

2007年 2月 10日

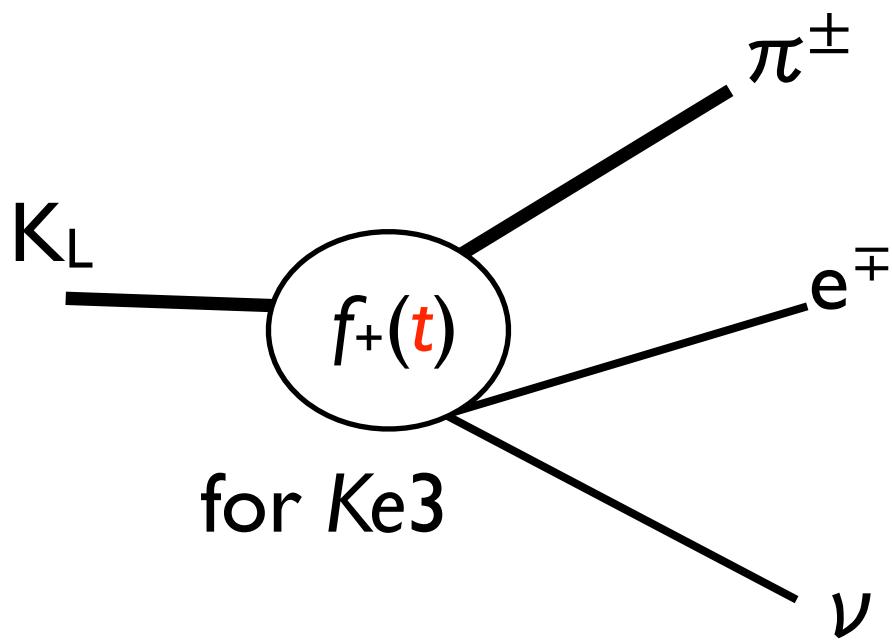
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It is ready to be sent to the God-parents (who?)

- Form:
I wrote it in a letter form, but we will discuss whether we will choose **PRL** or **PRD** rapid communications for publication.
- $t / M_\pi^2 \rightarrow t_\perp / M_\pi^2$
I use transverse $t = t_\perp$ instead of $t(\max)$ or/and $t(\min)$.

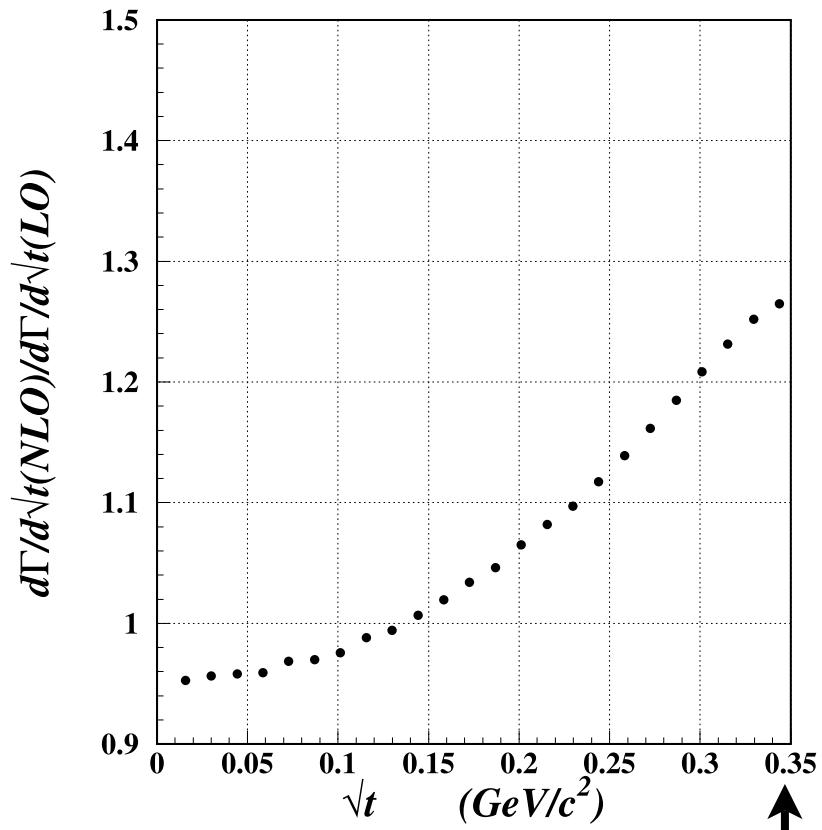
't' is sensitive to modification by NLO of ChPT

$$t = (P_K - P_\pi)^2$$



for Ke3

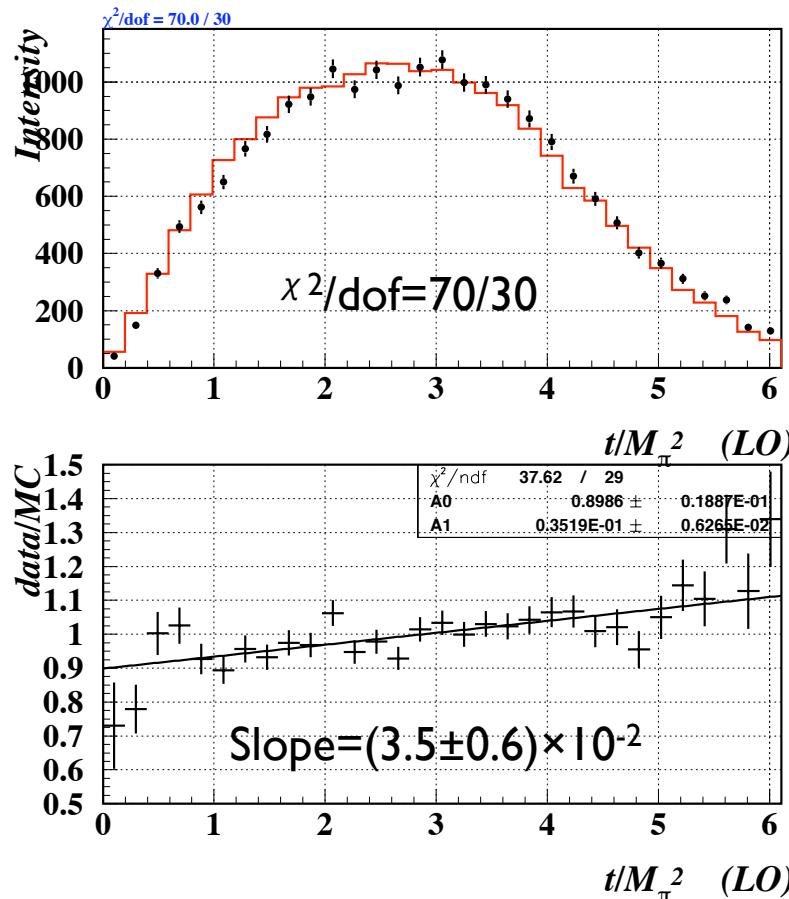
ChPT Cal. of **NLO/LO** of
 \sqrt{t} distribution for Ke3ee



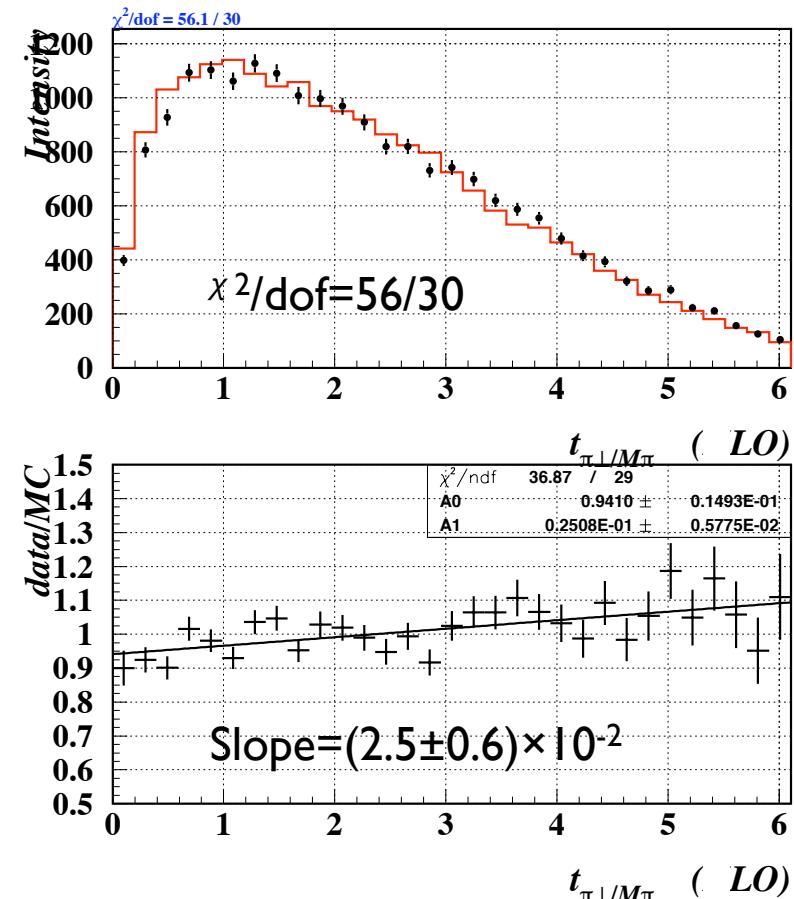
corresponding to $t/M_\pi^2=6.29$

't' has two-fold ambiguity

Comparisons of t / M_{π}^2 distributions between data and LO.



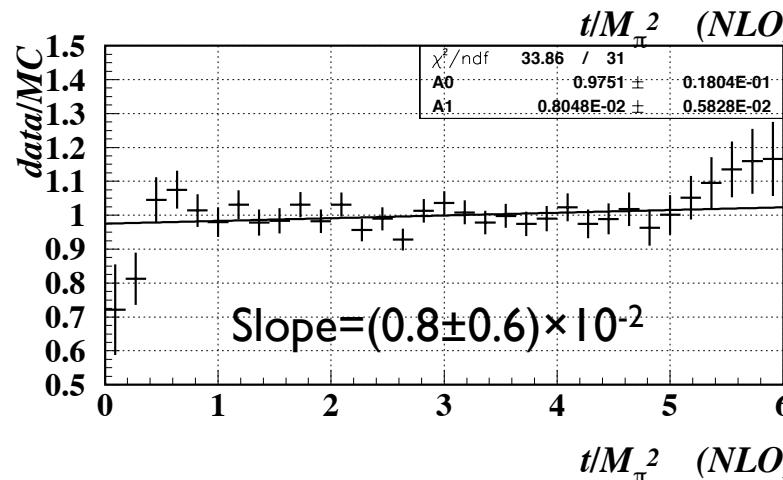
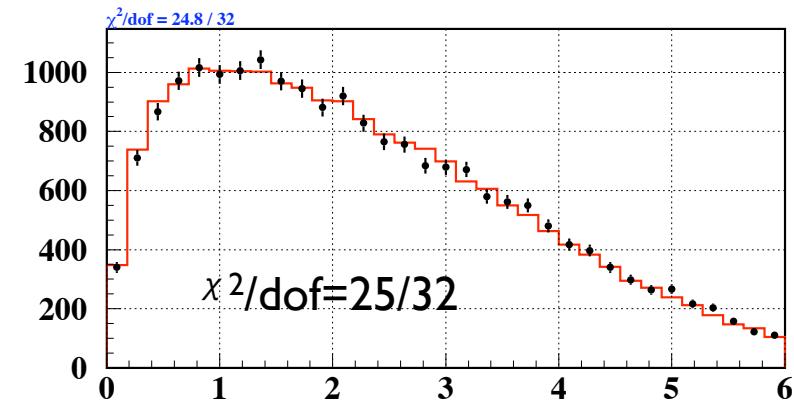
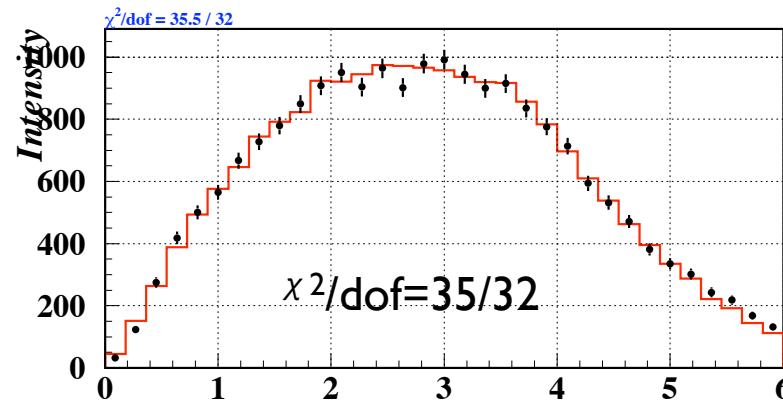
with minimum E_K



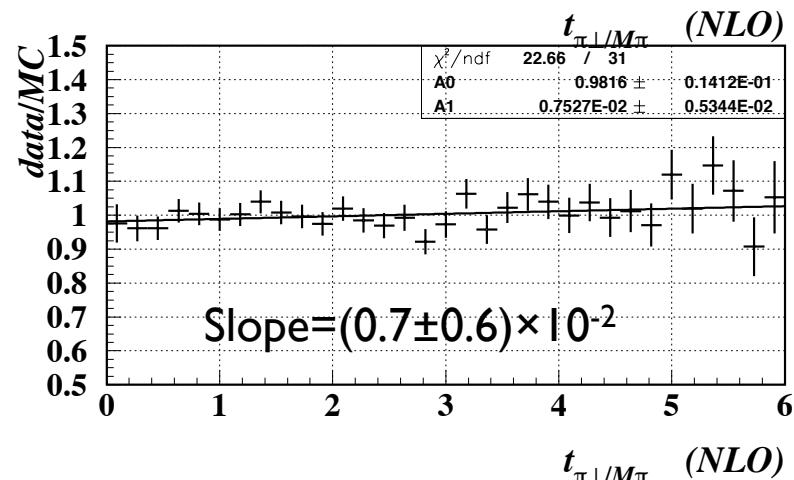
with maximum E_K

‘t’ has good agreements btw data and NLO for both soln.

Comparisons of t / M_π^2 distributions between data and NLO.



with minimum E_K

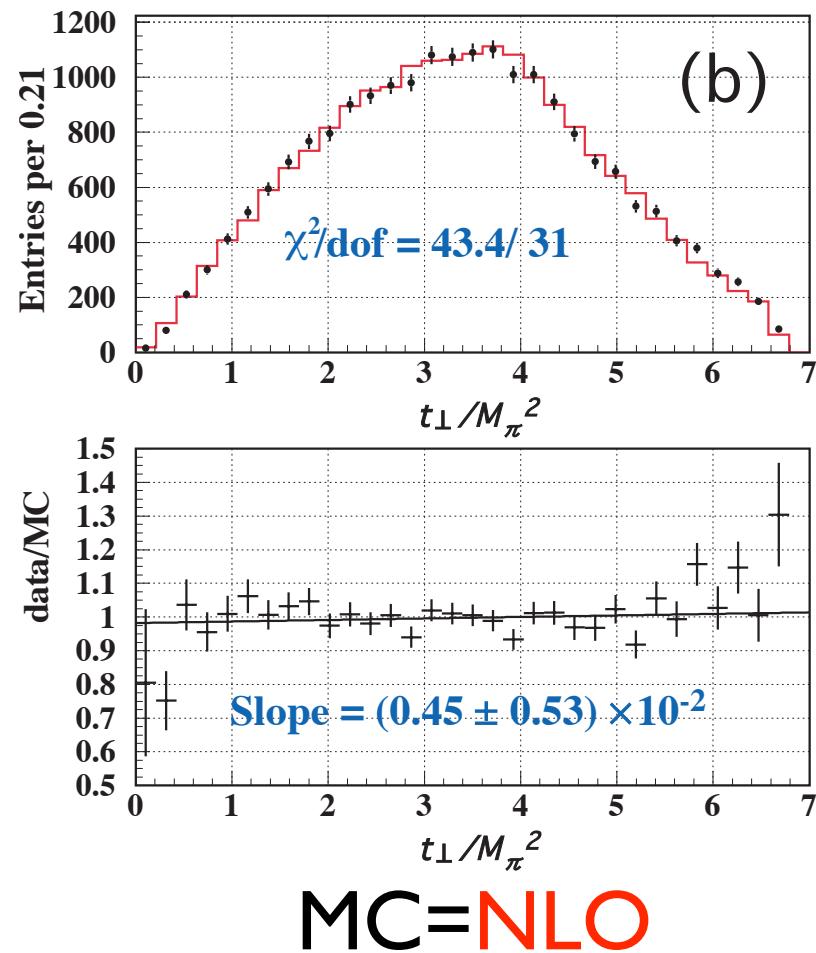
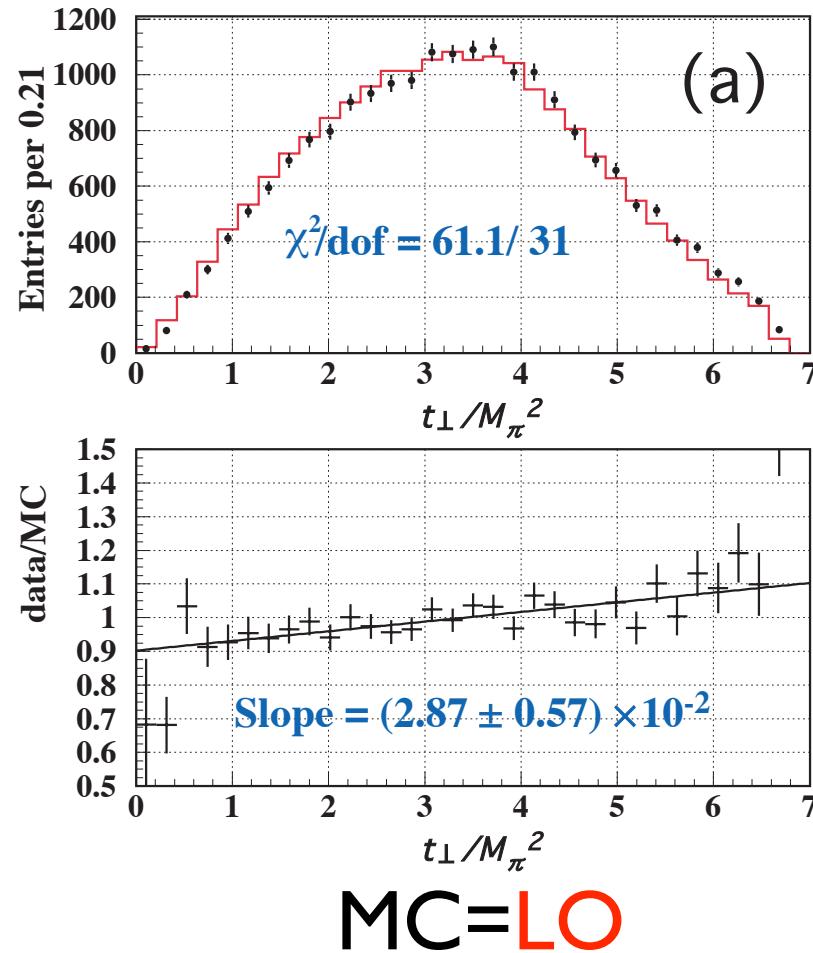


with maximum E_K

To avoid the ambiguity, we use...

$$t_{\perp} = M_K^2 + M_{\pi}^2 - 2M_K \sqrt{p_{\perp} \pi^2 + M_{\pi}^2}$$

Comparisons of t_{\perp}/M_{π}^2 distributions between data and MC.



Summary

- The draft of Ke3ee paper is ready to be shown the god-parents.
- We use t_{\perp}/M_{π}^2 instead of $t/M_{\pi}^2(\max)$ and/or $t/M_{\pi}^2(\min)$ to show how ChPT-NLO correction works well.